Common Flash Memory Interface Publication 100

Vendor & Device ID Code Assignments

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Intel Corporation 1900 Prairie City Rd, Folsom CA 95630-9598

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Intel CFI Program Office

c/o Alan Hanson Intel Corporation 1900 Prairie City Road, Mailstop FM3-123 Folsom, Ca. 95630-9598

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Overview

A. Purpose

The CFI Publication 100 is a companion document to the Common Flash Interface (CFI) specification, which outlines device and host system software interrogation handshake. CFI Publication 100 documents ID Code assignments for: 1) the Vendor-specific Command Set and Control Interfaces and 2) the Device Interfaces. It is published as needed when additions are made to either of these lists of codes.

B. Scope

The Vendor Command Set and Control Interface ID codes listed in CFI Publication 100 are assigned to each unique manufacturers' interfaces upon request to the CFI Program Office. Any number of different interfaces may be thus identified by a single vendor or association of vendors. It is up to those manufacturers to provide the detailed specifications for each identified interface. Similarly, new device interface codes will be assigned as needed as new devices employing the Common Flash Interface Query scheme are identified. CFI Publication 100 also provides examples of Query data output for pre-CFI devices as provided by participating vendors; these represent the appropriate data for the specifications and geometry of these devices as they would appear in the Query structure if the Query mode were available for them.

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Section 1.

Vendor Command Set & Control Interface ID Code Assignments

Hex Value	Integer Value	OEM Sponsor	Interface Name
0000	0	Null	e.g. when no Alternate Vendor Command Set
			and Control Interface is specified
0001	1	Intel/Sharp	Intel/Sharp Extended Command Set
0002	2	AMD/Fujitsu	AMD/Fujitsu Standard Command Set
0003	3	Intel	Intel Standard Command Set
0004	4	AMD/Fujitsu	AMD/Fujitsu Extended Command Set
0100	256	Mitsubishi	Mitsubishi Standard Command Set
0101	257	Mitsubishi	Mitsubishi Extended Command Set
FFFF	65,535	N/A	Not Allowed / Reserved for Future Use

Section 2.

Device Interface Code Assignments

Hex Value	Integer Value	Interface Name
0000	0	x8-only asynchronous interface
0001	1	x16-only asynchronous interface
0002	2	supports x8 and x16 via BYTE# with asynchronous interface
0003	3	x32-only asynchronous interface
FFFF	65,535	Not Allowed / Reserved for Future Use

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Appendix A. Query Structure Examples

The following tables represent example data for Query structures of existing devices which were in volume production prior to publication of the CFI specification. Thus these data would be the correct CFI parameters if the CFI Query mode were present today or if this mode were added to future versions of such devices. Lacking Query output from the devices, the current system software may embed these data to support both future CFI-compliant devices and current pre-CFI devices.

CFI Query Identification String

Offset	Length (bytes)	Description	Example Data Intel 28F008SC x8-only device		Example Data AMD/Fujitsu 29F016		Example Data Intel 28F800BVT		Example Data AMD/Fujitsu 29LV008		Example Data Intel 28F016SV x16 device/mode	
			XO-OIII	y device		y device		vice/mode	x16 device/mode		X10 dc	vicc/inouc
10h	03h	Query-unique ASCII string "QRY"	10:	51h	10:	51h	10:	0051h	10:	0051h	10:	0051h
			11:	52h	11:	52h	11:	0052h	11:	0052h	11:	0052h
			12:	59h	12:	59h	12:	0059h	12:	0059h	12:	0059h
13h	02h	Primary Vendor Command Set and	13:	03h	13:	02h	13:	0003h	13:	0002h	13:	0003h
		Control Interface ID Code	14:	00h	14:	00h	14:	0000h	14:	0000h	14:	0000h
		16-bit ID code for vendor-specified algorithms										
15h	02h	Address for Primary Algorithm	15:	32h	15:	40h	15:	003Eh	15:	0040h	15:	0032h
		extended Query table	16:	00h	16:	00h	16:	0000h	16:	0000h	16:	0000h
		Offset value = $P >= 31h$										
17h	02h	Alternate Vendor Command Set and	17:	00h	17:	00h	17:	0000h	17:	0000h	17:	0000h
		Control Interface ID Code	18:	00h	18:	00h	18:	0000h	18:	0000h	18:	0000h
		second vendor-specified algorithm supported										
		Note: ID Code = 0000h means none exists										
19h	02h	Address for Secondary Algorithm	19:	00h	19:	00h	19:	0000h	19:	0000h	19:	0000h
		extended Query table	20:	00h	20:	00h	20:	0000h	20:	0000h	20:	0000h
		Note: Address 0000h means none exists										

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_System Interface String

Offset	Length (bytes)	Description	Examp Intel 28 x8-only	F008SC	AMD/ 291	ole Data Fujitsu F016 y device	28F8	ple Data ntel 00BVT vice/mode	AMD 29I	ple Data D/Fujitsu LV008 vice/mode	Intel 2	ple Data 8F016SV vice/mode
1Bh	01h	Vcc Logic Supply Minimum Write/Erase voltage bits 7- 4 BCD volts bits 3-0 BCD 100 mv	1B:	30h	1B:	45h	1B:	0030h	1B:	0027h	1B:	0030h
1Ch	01h	Vcc Logic Supply Maximum Write/Erase voltage bits 7- 4 BCD volts bits 3-0 BCD 100 mv	1C:	55h	1C:	55h	1C:	0055h	1C:	0036h	1C:	0055h
1Dh	01h	Vpp [Programming] Supply Minimum Write/Erase voltage bits 7- 4 HEX volts bits 3-0 BCD 100 mv	1D:	30h	1D: (No	00h Vpp)	1D:	0045h	1D: (No	0000h O Vpp)	1D:	0045h
1Eh	01h	Vpp [Programming] Supply Maximum Write/Erase voltage bits 7- 4 HEX volts bits 3-0 BCD 100 mv	1E:	C6h	1E: (No	00h Vpp)	1E:	00C6h	1E: (No	0000h o Vpp)	1E:	00C6h

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System Interface String (continued)

Offset	Length (bytes)	ytes) Intel 2		le Data F008SC	C AMD/Fujitsu		Example Data Intel		Example Data AMD/Fujitsu		Example Data Intel 28F016SV	
			x8-only	device		F016		800BVT	29LV008		x16 de	vice/mode
					x8-onl	y device	x16 de	vice/mode	x16 de	evice/mode		
1Fh	01h	Typical timeout per single byte/word	1F:	03h	1F:	03h	1F:	0003h	1F:	0003h	1F:	0003h
		write, 2^N u-sec (00h = not supported)										
20h	01h	Typical timeout for max buffer write,	20:	00h	20:	00h	20:	0000h	20:	0000h	20:	000Ah
		2^{N} u-sec (00h = not supported)										
21h	01h	Typical timeout per individual block	21:	0Ah	21:	0Ah	21:	000Ah	21:	000Ah	21:	000Ah
		erase, 2^{N} m-sec (00h = not supported)										
22h	01h	Typical timeout for full chip erase,	22:	00h	22:	00h	22:	0000h	22:	000Eh	22:	000Eh
		2^{N} m-sec (00h = not supported)										
23h	01h	Maximum timeout for byte/word write,	23:	04h	23:	04h	23:	0004h	23:	0004h	23:	0004h
		2^{N} times typical $(00h = N/A)$										
24h	01h	Maximum timeout for buffer write,	24:	00h	24:	00h	24:	0000h	24:	0000h	24:	0004h
		2^{N} times typical $(00h = N/A)$										
25h	01h	Maximum timeout per individual block erase,	25:	04h	25:	04h	25:	0004h	25:	0004h	25:	0004h
		2^{N} times typical $(00h = N/A)$										
26h	01h	Maximum timeout for chip erase,	26:	00h	26:	00h	26:	0000h	26:	0004h	26:	0004h
		2^{N} times typical $(00h = N/A)$										

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Device Geometry Definition

Offset	Length (bytes)	Description	Intel 2	ole Data 8F008SC y device	AMD/	ole Data Fujitsu F016	1	ple Data Intel 800BVT	AMD	ple Data D/Fujitsu LV008	Intel 2	ple Data 28F016SV vice/mode
					x8-only	y device	x16 de	vice/mode	x16 de	vice/mode		
27h	01h	Device Size= 2 ⁿ in number of bytes.	27:	14h	27:	15h	27:	0014h	27:	0014h	27:	0015h
28h	02h	Flash Device Interface description value meaning 0000h x8 asynchronous 0002h x8/x16 asynchronous	28: 29:	00h 00h	28: 29:	00h 00h	28: 29:	0002h 0000h	28: 29:	0002h 0000h	28: 29:	0002h 0000h
2Ah	02h	Maximum number of bytes in multi-byte write = 2^N (0000h = not supported)	2A: 2B:	00h 00h	2A: 2B:	00h 00h	2A: 2B:	0000h 0000h	2A: 2B:	0000h 0000h	2A: 2B:	0008h 0000h
2Ch	01h	Number of Erase Block Regions within device: bits 7-0 = x = # of Erase Block Regions	2C:	01h	2C:	01h	2C:	0004h	2C:	0004h	2C:	0001h
2Dh	04h	Erase Block Region 1 Information	y: (16	BLKs)	y: (32 l	BLKs)	y: (7 B	LKs)	y: (1 BLK)		y: (32 BLKs)	
		bits 31- 16 = z , where the Erase Block(s) within this Region are (z) times 256 bytes bits 15 - 0 = y , where y+1 = Number of Erase Blocks of identical size within region	2D: 2E: z: (64K 2F:	0Fh 00h (B size) 00h	2D: 2E: z: (64K 2F:	1Fh 00h B size) 00h	2D: 2E: z: (128) 2F:	0006h 0000h KB size) 0000h	2D: 2E: z: (16K) 2F:	0000h 0000h XB size) 0040h	2D: 2E: z: (64K 2F:	001Fh 0000h B size) 0000h
			30:	00h	30:	01h	30:	0000h	30:	0040h	30:	0000h

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Device Geometry Definition (continued)

Offset	Length (bytes)	Description	Example Data Intel 28F008SC x8-only device	Example Data AMD/Fujitsu 29F016	28F8	ple Data ntel 00BVT	AMD 291	ple Data D/Fujitsu LV008	Example Data Intel 28F016SV x16 device/mode
31h	04h	Erase Block Region 2 Information		x8-only device	y: (1 BL 31: 32: z: (96KI 33: 34:	0000h 0000h	y: (2 B) 31: 32: z: (8KH 33: 34:	0001h 0000h	
35h	04h	Erase Block Region 3 Information			y: (2 BL 35: 36: z: (8KB 37: 38:	0001h 0000h	y: (1 B) 35: 36:		
39h	04h	Erase Block Region 4 Information			y: (1 BL 39: 3A: z: (16KI 3B: 3C:	0000h 0000h	y: (15 I 39: 3A: z: (64K 3B: 3C:	BLKs) 000Eh 0000h KB size) 0000h 0001h	

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Primary Vendor-Specific Extended Query Table

Offset	Length (bytes)						
(P)h	03h	Primary extended Query table unique ASCII string "PRI"	P: 50h P+1: 52h P+2: 49h				
(P+3)h	01h	Major version number, ASCII	P+3: VV _P				
(P+4)h	01h	Minor version number, ASCII	P+4: vv _P				
(P+5)h	variable	Vendor-specific extended Query table contents	TBD by Vendo				

Alternate Vendor-Specific Extended Query Table

Offset	Length (bytes)	Description	Data
(A)h	03h	Alternate extended Query table unique ASCII string "ALT"	A: 41h A+1: 4Ch A+2: 54h
(A+3)h	01h	Major version number, ASCII	$A+3: VV_A$
(A+4)h	01h	Minor version number, ASCII	A+4: vv _A
(A+5)h	variable	Vendor-specific extended Query table contents	TBD by Vendor

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